

J. R. Johnson
Vice President - Farley

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July 2, 2010

Docket Nos.: 50-364

NL-10-1201

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D. C. 20555-0001

Joseph M. Farley Nuclear Plant – Unit 2
Licensee Event Report 2010-002-00
Reactor Trip due to Failed Feedwater Regulating Valve Controller

Ladies and Gentlemen:

In accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), Southern Nuclear Operating Company (SNC) is submitting the enclosed Licensee Event Report.

This letter contains no NRC commitments. If you have any questions, please contact Doug McKinney at (205)992-5982.

Sincerely,

A handwritten signature in black ink, appearing to read "J. R. Johnson", with a long horizontal flourish extending to the right.

J. R. Johnson
Vice President – Farley

JRJ/WDO

Enclosure: Unit 2 Licensee Event Report 2010-002-00

cc: Southern Nuclear Operating Company
Mr. J. T. Gasser, Executive Vice President
Mr. J. R. Johnson, Vice President – Farley
Ms. P. M. Marino, Vice President – Engineering
RTYPE: CFA04.054

U. S. Nuclear Regulatory Commission
Mr. L. A. Reyes, Regional Administrator
Mr. R. E. Martin, NRR Project Manager – Farley
Mr. E. L. Crowe, Senior Resident Inspector – Farley
Mr. P. Boyle, NRR Project Manager

**Joseph M. Farley Nuclear Plant – Unit 2
Licensee Event Report 2010-002-00
Reactor Trip due to Failed Feedwater Regulating Valve Controller**

Enclosure

Unit 2 Licensee Event Report 2010-002-00

LICENSEE EVENT REPORT (LER)

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records and FOIA/Privacy Service Branch (T-5 F52), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NE0B-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME Joseph M Farley Nuclear Plant – Unit 2	2. DOCKET NUMBER 05000 364	3. PAGE 1 of 3
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4. TITLE
Reactor Trip due to Failed Feedwater Regulating Valve Controller

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
05	22	2010	2010	- 002 -	00	07	02	2010		05000
									FACILITY NAME	DOCKET NUMBER
										05000

9. OPERATING MODE 1	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR§: (Check all that apply)											
	<input type="checkbox"/> 20.2201(b) <input type="checkbox"/> 20.2201(d) <input type="checkbox"/> 20.2203(a)(1) <input type="checkbox"/> 20.2203(a)(2)(i) <input type="checkbox"/> 20.2203(a)(2)(ii) <input type="checkbox"/> 20.2203(a)(2)(iii) <input type="checkbox"/> 20.2203(a)(2)(iv) <input type="checkbox"/> 20.2203(a)(2)(v) <input type="checkbox"/> 20.2203(a)(2)(vi)	<input type="checkbox"/> 20.2203(a)(3)(i) <input type="checkbox"/> 20.2203(a)(3)(ii) <input type="checkbox"/> 20.2203(a)(4) <input type="checkbox"/> 50.36(c)(1)(i)(A) <input type="checkbox"/> 50.36(c)(1)(ii)(A) <input type="checkbox"/> 50.36(c)(2) <input type="checkbox"/> 50.46(a)(3)(ii) <input type="checkbox"/> 50.73(a)(2)(i)(A) <input type="checkbox"/> 50.73(a)(2)(i)(B)	<input type="checkbox"/> 50.73(a)(2)(i)(C) <input type="checkbox"/> 50.73(a)(2)(ii)(A) <input type="checkbox"/> 50.73(a)(2)(ii)(B) <input type="checkbox"/> 50.73(a)(2)(iii) <input checked="" type="checkbox"/> 50.73(a)(2)(iv)(A) <input type="checkbox"/> 50.73(a)(2)(v)(A) <input type="checkbox"/> 50.73(a)(2)(v)(B) <input type="checkbox"/> 50.73(a)(2)(v)(C) <input type="checkbox"/> 50.73(a)(2)(v)(D)	<input type="checkbox"/> 50.73(a)(2)(vii) <input type="checkbox"/> 50.73(a)(2)(viii)(A) <input type="checkbox"/> 50.73(a)(2)(viii)(B) <input type="checkbox"/> 50.73(a)(2)(ix)(A) <input type="checkbox"/> 50.73(a)(2)(x) <input type="checkbox"/> 73.71(a)(4) <input type="checkbox"/> 73.71(a)(5) <input type="checkbox"/> OTHER								
10. POWER LEVEL 100												

Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

NAME J. R. Johnson – Vice President	TELEPHONE NUMBER (Include Area Code) 334 899-5156
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13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO EPIX
B	JB	LC	W120	Y					

14. SUPPLEMENTAL REPORT EXPECTED

☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE)☒ NO

15. EXPECTED SUBMISSION DATE

MONTH	DAY	YEAR

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On May 22, 2010 at 16:34, with Unit 2 at 100% power, the reactor was manually tripped due to 2C Steam Generator (SG) Feedwater Regulating Valve (FRV) failing closed. At approximately 16:34, the control room crew received multiple alarms associated with 2C SG level and a process cabinet failure. The crew noted no feedwater flow and decreasing level in 2C SG. Manual control of the 2C SG FRV was attempted but there was no power or control capability of the main feedwater regulating valve. At approximately 40% narrow range level in the 2C SG, the crew manually tripped Unit 2 prior to the automatic trip setpoint of 28% narrow range level. All safety systems functioned as designed without complications.

Investigation revealed that the controller driver (NCD) card in the 2C SG FRV controller circuitry failed causing the 2C SG FRV to close. The failed NCD card was replaced. Unit 2 was restarted and returned to Mode 1 on May 23, 2010 at 17:12.

LICENSEE EVENT REPORT (LER)
CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Joseph M. Farley Nuclear Plant Unit - 2	05000 364	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 of 3
		2010	- 002	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

Westinghouse – Pressurized Water Reactor
Energy Industry Identification Codes are identified in the text as [XX]

Description of Event

On May 22, 2010 at 16:34, with Unit 2 at 100% power, the reactor was manually tripped due to 2C Steam Generator (SG) Feedwater Regulating Valve (FRV) [JB] failing closed. At approximately 16:34, the control room crew received multiple alarms associated with 2C SG level and a process cabinet failure. The crew noted no feedwater flow and decreasing level in 2C SG. Manual control of the 2C SG FRV was attempted but there was no power or control capability of the main feedwater regulating valve. At approximately 40% narrow range level in the 2C SG, the crew manually tripped Unit 2 prior to the automatic trip setpoint of 28% narrow range level. Both the 2A and 2B Motor Driven Auxiliary Feedwater (MDAFW) [BA] pumps automatically started to supply auxiliary feedwater to the 2C S/G. All safety systems functioned as designed without complications.

Investigation revealed that the controller driver (NCD) card in the 2C SG FRV controller circuitry failed causing the 2C SG FRV to close. The failed NCD card impacted no other SG FRV controls.

In accordance with 10 CFR 50.72(b)(2)(iv)(B) for a manual actuation of the reactor protection system on Unit 2, a four hour non-emergency report was issued on May 22, 2010 at 18:10, Event Notification number 45946.

Cause of Event

The NCD card (C8-330) in process control cabinet 8 of the 7300 system failed causing the 2C SG FRV to close. The NCD card malfunction was due to a S1-1 Silicon Controlled Rectifier (SCR) failure. The root cause investigation team, with support of the vendor, found only one other industry occurrence where this component failed.

The NCD card supplies power to the 2C SG FRV controller and controller power was lost when the card failed. Without controller power the 2C SG FRV closed and could not be operated in either manual or automatic mode. A manual Unit 2 reactor trip was initiated at approximately 40% narrow range level in the 2C SG.

Safety Assessment

This event had no adverse effect on the safety and health of the public.

The Auxiliary Feedwater (AFW) system automatically supplies feedwater to the steam generators to remove decay heat from the reactor coolant system upon the loss of normal feedwater supply. The AFW system consists of two MDAFW pumps and one steam Turbine Driven Auxiliary Feedwater (TDAFW) pump configured into three trains. The MDAFW pumps both actuated automatically as

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CONTINUATION SHEET

1. FACILITY NAME	2. DOCKET	6. LER NUMBER			3. PAGE
Joseph M. Farley Nuclear Plant Unit - 2	05000 364	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 of 3
		2010	- 002	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

designed on a low-low water level signal in the 2C SG. The TDAFW pump automatically actuates on low-low level in two of three SGs and did not start since only the 2C SG experienced low-low levels. Water level in the 2C SG recovered to normal range as expected following the manual reactor trip. There were no safety system functional failures and all systems functioned as designed.

Corrective Action

A root cause was initiated to determine the cause of the failed NCD card. The NCD card malfunction was determined to be a S1-1 Silicon Controlled Rectifier (SCR) failure. The root cause investigation team, with support of the vendor, found only one other industry occurrence where this component failed. The failed NCD card was replaced with a new card. Unit 2 was restarted and returned to Mode 1 on May 23, 2010 at 17:12.

Industry Operating Experience (OE) on the event has been issued.

Additional Information**Previous Similar Events:**

LER 2008-004-00 Unit 1 Reactor Trip due to Loss of RCP Breaker Position

LER 2007-001-00 Unit 2 Reactor Trip during Unit 1 Main Generator Differential Lockout Relay Test